

Patent Abstracts of Japan

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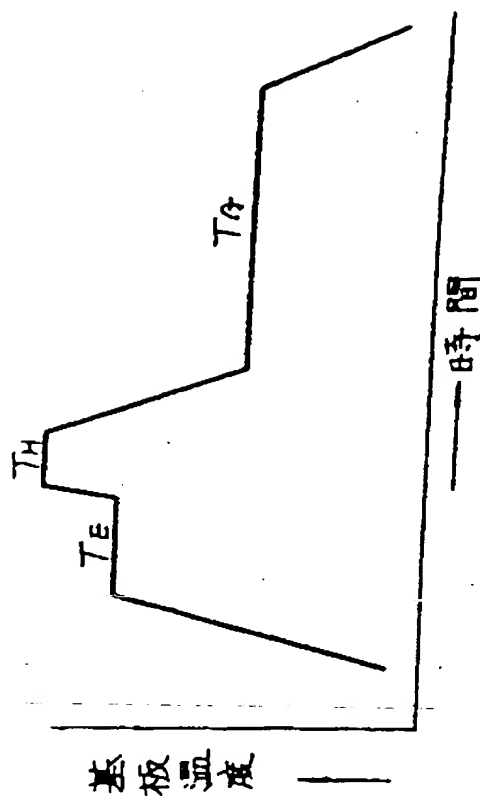
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TITLE : SILICON EPITAXIAL GROWTH
METHOD



ABSTRACT : PURPOSE: To reduce autodoping and to decrease the thickness of an impurity transition region in Si epitaxial growth for the purpose of producing a bipolar type semiconductor device by maintaining the substrate at the temp. higher than the temps. in both stages of gaseous etching and epitaxial growth between both stages.

CONSTITUTION: In the stage of producing a bipolar type semiconductor device by forming an n type epitaxial growth layer of a low impurity concn. on a p type substrate having a layer implanted with n type impurities such as Sb, As or the like of high concns. partially, the substrate surface is beforehand cleaned by a gaseous etching stage, after which the substrate is subjected to an epitaxial growth stage. In this case, the substrate is held at a temp. TH, higher than the temps. TE, TG of both stages, whereby the impurities near the surface of the n type impurity implanted layer are partly diffused to the outside of the substrate, and the concn. of the impurities is reduced. Therefore, the autodoping by these impurities is difficult to occur, the thickness of the impurity transition region of the epitaxial growth layer is reduced and the performance of the bipolar type semiconductor device is improved.

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